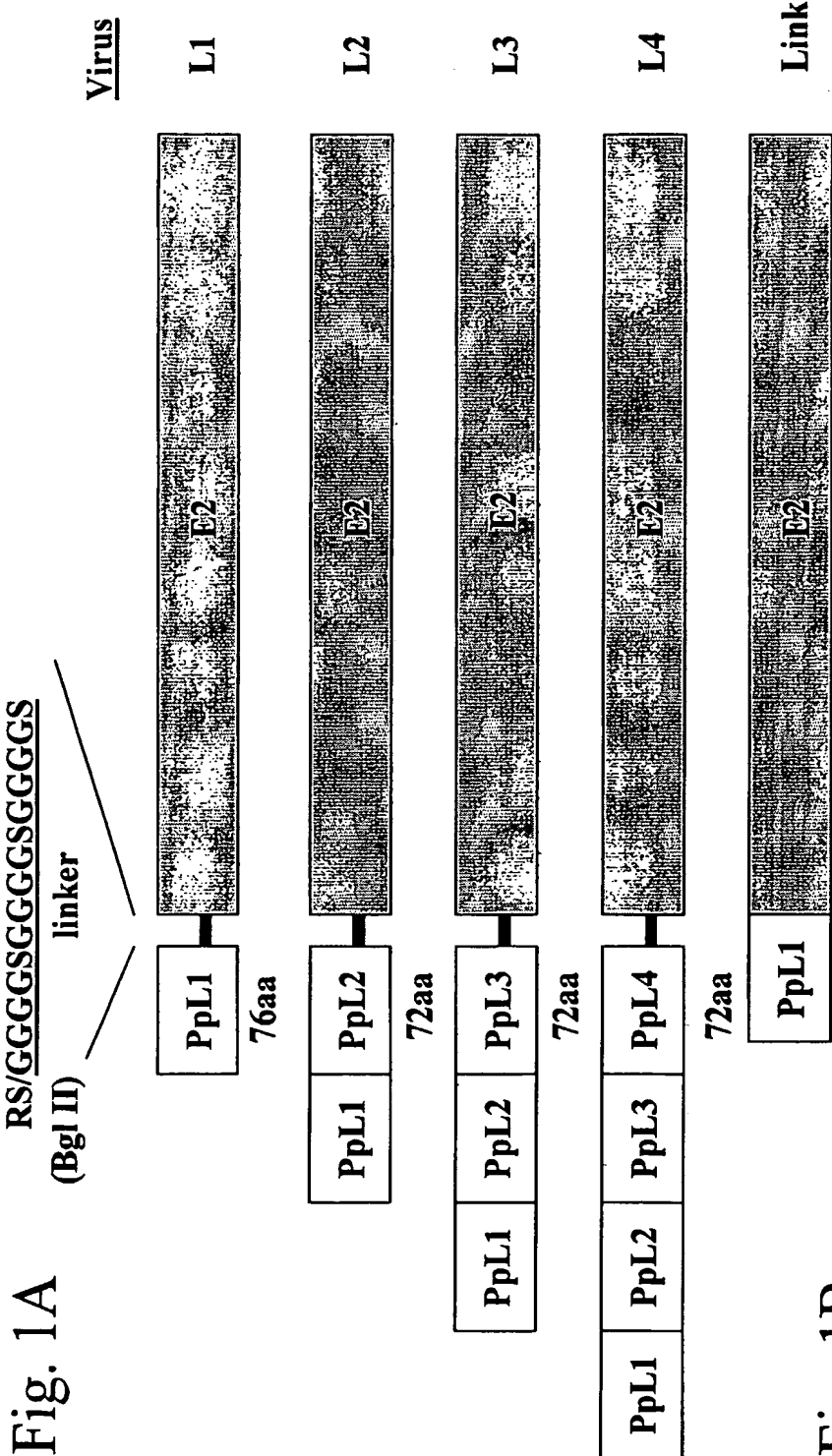## Fig. 1A

Fig. 1B

L1

KEETPETPETDSEEEVTIKANLIFANGSTQTAEFKGTFEKATSEAYAYADTLKKDNGEYTVDVADKGYTLNIKFAG

NDSK

KEETPETPETDSEEEVTIKANLIFADGKTQTAEFKGTFEKATSEAYAYADTLKKDNGEYTVDVADKGYTLNIKFAG

IBN

KEETPETPETDSEEEVTIKANLIFADGKTQTAEFKGTFEKATSEAYAFADTHKKDNGEYTWDVADKGYTLNIKFAG
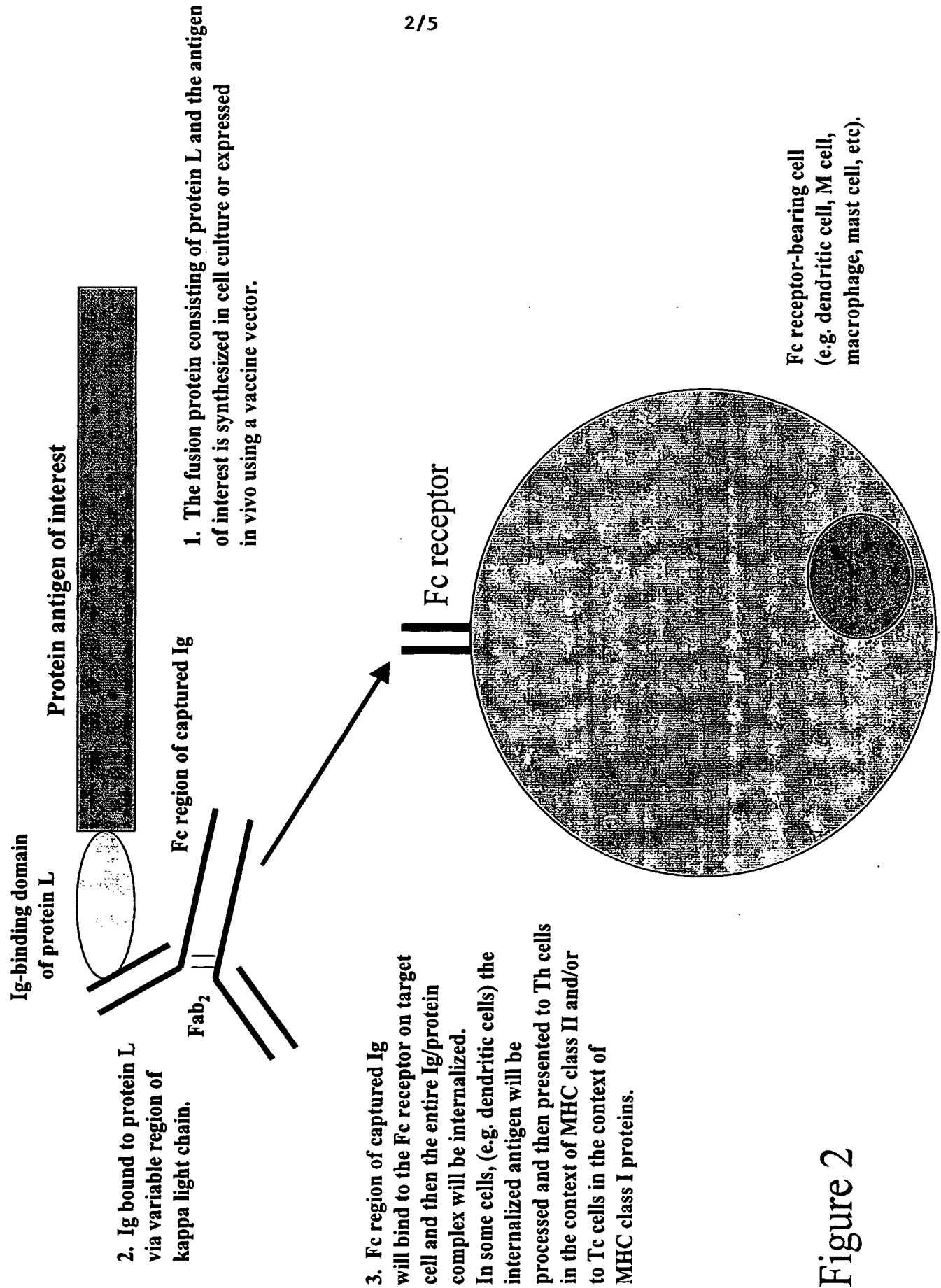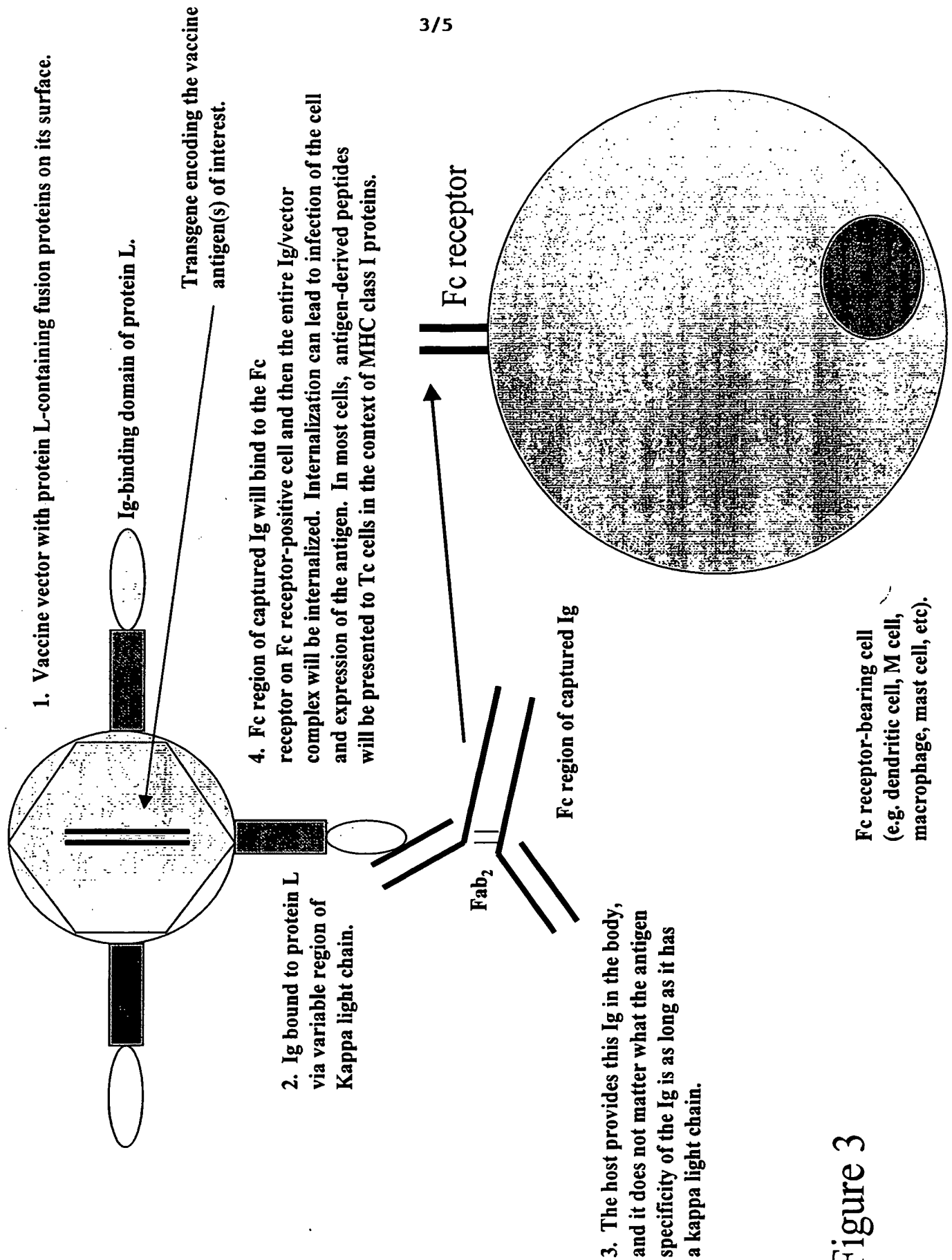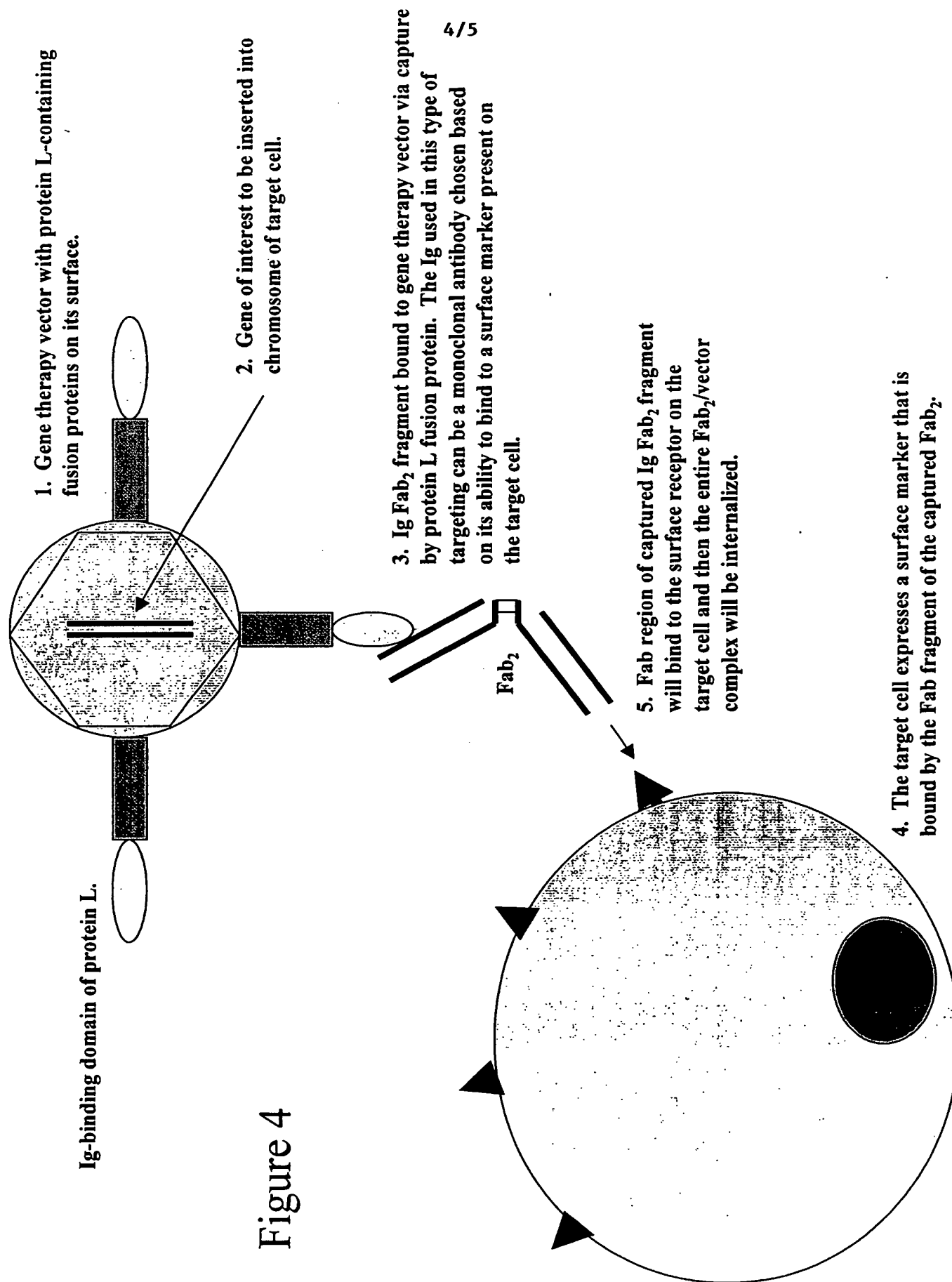　　　　　　　　　　　　　　　　　　　　　　　1　　1　　1　　　　　2

Protein antigen of interest

Ig-binding domain
of protein L

Fc region of captured Ig

Fab₂

Fc receptor

Fc receptor-bearing cell
(e.g. dendritic cell, M cell,
macrophage, mast cell, etc).

1. The fusion protein consisting of protein L and the antigen of interest is synthesized in cell culture or expressed in vivo using a vaccine vector.

2. Ig bound to protein L via variable region of kappa light chain.

3. Fc region of captured Ig will bind to the Fc receptor on target cell and then the entire Ig/protein complex will be internalized. In some cells, (e.g. dendritic cells) the internalized antigen will be processed and then presented to Th cells in the context of MHC class II and/or to Tc cells in the context of MHC class I proteins.

Figure 2

Figure 3

1. Gene therapy vector with protein L-containing fusion proteins on its surface.

2. Gene of interest to be inserted into chromosome of target cell.

3. Ig Fab$_2$ fragment bound to gene therapy vector via capture by protein L fusion protein. The Ig used in this type of targeting can be a monoclonal antibody chosen based on its ability to bind to a surface marker present on the target cell.

Ig-binding domain of protein L.

Fab$_2$

5. Fab region of captured Ig Fab$_2$ fragment will bind to the surface receptor on the target cell and then the entire Fab$_2$/vector complex will be internalized.

4. The target cell expresses a surface marker that is bound by the Fab fragment of the captured Fab$_2$.

Figure 4

FIGURE 5A

| PpL | | VP7 |

Linker (RS/GGGGSGGGGSGGGGS)
Bgl II

FIGURE 5B

| PpL | | PspA |

Linker (RS/GGGGSGGGGSGGGGS)
Bgl II

FIGURE 5C

| TPA | PpL | | PspA |

Linker (RS/GGGGSGGGGSGGGGS)
Bgl II
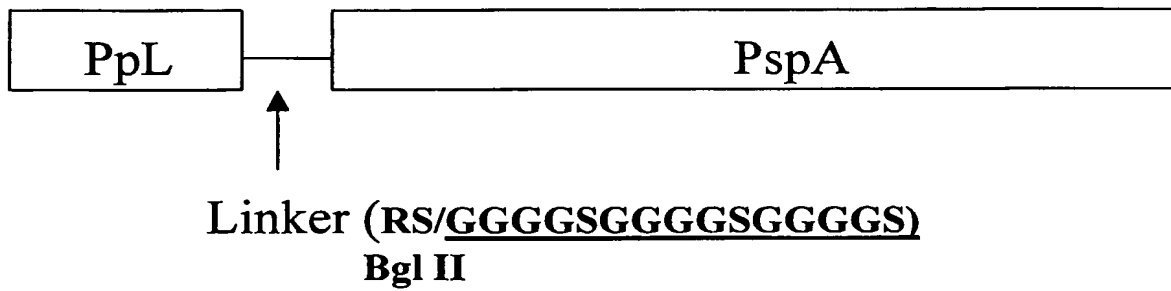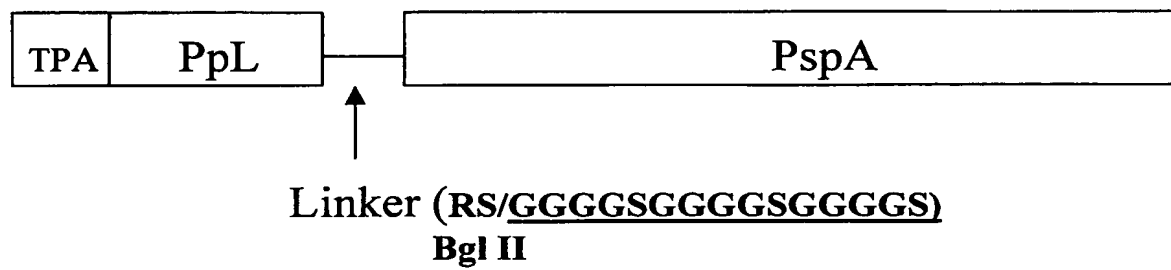
FIGURE 5D

Signal sequence of Ag2/PRA

| | PpL | | Ag2/PRA |

Linker (RS/GGGGSGGGGSGGGGS)
Bgl II